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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/723,926	11/28/2000	Howard Turner	SMX 3099.11(98-14CIP3DIV2	7411

321 7590 03/03/2003

SENNIGER POWERS LEAVITT AND ROEDEL
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16TH FLOOR
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EXAMINER
SODERQUIST, ARLEN

ART UNIT	PAPER NUMBER
1743	14

DATE MAILED: 03/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/723,926	Applicant(s) Turner et al.
	Examiner Arlen Soderquist	Art Unit 1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jan 6, 2003* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *163-171 and 178-195* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *163-171 and 178-195* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *10,13*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1. The disclosure is objected to because of the following informalities: **the current status of all nonprovisional parent applications referenced should be included.**

Appropriate correction is required.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 182-183 are rejected under 35 U.S.C. 102(e) as being anticipated by Juranas (US 5,709,840 or US 5,711,917 hereinafter called Juranas '840 and Juranas '917 respectively).

In Juranas '917, a laboratory reactor apparatus includes a suction tube, at least a portion of which has a constricted inside diameter is taught. The lower portion of the suction tube is sealed to a sintered frit filter medium. The suction tube mounts in a reactor block into a reactor vial for receiving chemical components. An inlet channel with a first seal is formed through the block and conveys chemical component materials to the vial, and a suction channel with a second seal, coaxial with the suction tube, is used to remove resultant chemical compound materials therefrom. A pressurized gas channel containing inert gas is formed through the block to intersect the suction channel and the inlet channel. Column 1 lines 9-33 teach that the device is intended to be used with robotic systems in which chemical and pharmaceutical compounds are synthesized and evaluated (a plurality of reaction blocks are present). Column 4 discusses the addition of fluids to the reactor.

In Juranas '840 a first aspect of the invention involves placing a pair of parallel, spaced apart sealing septa in each channel of a reactor block through which materials are added to or removed from a reactor flask such that the septa enclose a cavity within the channel. A hole is formed through the block to intersect the cavity and is connected to a source of low pressure, substantially non-reactive gas which acts to prevent materials from leaking through a hole in either septum. The reactor flask is formed of glass as a substantially conical chamber with a first tube and a second tube connected to the flask perpendicular to its axis. The second tube extends within the flask so that its interior end resides proximate the opposite interior surface of the flask. The second tube terminates in a glass frit being permeable to certain of the chemical materials in work and non-permeable to others so as to act as a filter. The two tubes are assembled into the holes in the reactor block and held in position with resilient O-rings forced into pressurized contact with an internally conical washer in each hole, supporting the reactor flask in a nominally horizontal orientation for operation. Column 1 lines 5-53 teach that the device is intended to be used with robotic systems in which chemical and pharmaceutical compounds are synthesized and evaluated (a plurality of reaction blocks are present). Column 5 discusses the addition of fluids to the reactor.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 163-171 and 178-195 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebl in view of Fullemann and Calvet (both newly cited and applied). In the patent Lebl teaches apparatus and method for combinatorial chemistry synthesis. In a first embodiment, this invention includes an integrated robot apparatus for performing combinatorial chemical synthesis protocols and having interchangeable work-stations, robot arm tools, and reaction vessels and reaction vessel arrays. The work-stations and tools are specialized to perform tasks necessary for the synthesis in a plurality of the reaction vessels grouped in a plurality of the reaction vessel arrays. Preferably, these elements function interchangeably because they have standardized sizes and conformation. The work-stations and tools include those for fluid dispensing or aspirating from individual reaction vessels or from all the reaction vessels in an array simultaneously. The reaction vessels can include, alternatively, stackable, ball-sealed reaction vessels, microtitre-like reaction vessel arrays, arrays of independent reaction vessels, valve-sealed reaction vessels (figures 8-11 and the description thereof), septum-sealed reaction vessels (figure 12 and the description thereof), and syringe reaction vessels. In alternative embodiments, this invention includes these work-stations, tools, reaction vessels and reaction vessel arrays in various combinations or sub-combinations either for use in partially integrated robots or for manual or stand-alone use. Column 9, lines 40-54 teach several different examples of the types of compounds which can be synthesized in this manner including benzodiaepines. Lebl does not teach that the syntheses occur at elevated pressure, the presence of a catalyst or a closure in which the valve closes prior to the syringe being removed from the device.

In the patent Fullemann teaches a septum for an injection port of a gas chromatograph includes interlocked syringe (103) and duckbill seals (105). The syringe seal prevents fluid leakage during injection by syringe. The duckbill seal prevents fluid leakage after the syringe needle is withdrawn from the septum. A spring clip (107) is used to urge the duckbill closed as the needle is withdrawn. An advantage of this two component septum is that the duckbill slit can be precisely formed in the duckbill seal before the seals are engaged. Column 1 discusses the problem with typical septum seals including leakage due to seal failure or problems with the syringe due to bent needles. Column 2, lines 40-50 discusses characteristics of duckbill seals

including there use as check valves and ability to be used in high pressure situations. Column 3, lines 44-59 discuss the instant seal, the different functions of the two components and the advantages obtained thereby.

In the patent Calvet teaches process and intermediates for the preparation of benzodiazepines. Column 5 lines 51-64 teaches preparation of benzodiazepines suspending a compound of formula (IV) in 5 to 100 volumes of an organic solvent such as, for example, an lower aliphatic alcohol or an ester of a lower aliphatic alcohol with a lower carboxylic acid, in the presence of a hydrogenation catalyst such as, for example, Raney nickel, rhodium on charcoal or ruthenium on charcoal, which is the reagent generally preferred. The suspension is stirred under a hydrogen atmosphere at a pressure of between atmospheric pressure and 30 atmospheres for a period of between 1 and 50 hours at a temperature of between 0°C and 80 °C.; a pressure slightly above atmospheric pressure, a temperature of approximately 70 °C and a stirring time of 2 hours generally being sufficient to ensure complete the reaction. The reaction medium is then filtered and the catalyst washed several times with a solvent of the same type as that mentioned above. Column 8, lines 1-10 teach an alternate embodiment in which the compound of formula (VI) is combined with a reducing agent in the presence of a reduction catalyst such as, for example, ammonium formate in the presence of palladium on charcoal or hydrogen (under a pressure of between 1 and 5 atmospheres) in the presence of palladium deposited on calcium carbonate (so-called Lindlar catalyst). After filtration of the catalyst, the aminated product of formula (V) is isolated in a manner similar to that described above. Example 1 shows two examples including one in which a reactor capable of withstanding a pressure of 12 bar is used in the process.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a septum with a duckbill valve as taught by Fullemann in the Lebl apparatus and method because of the ability of that septum to provide an effective seal of a pressurized gas during the insertion of a syringe to insert a liquid in the system and the recognition that during the synthesis of compounds such as the benzodiazepines taught by Lebl, elevated pressures would be required as shown by Calvet.

6. The terminal disclaimer filed on January 6, 2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent 6,306,658 has been reviewed and is accepted. The terminal disclaimer has been recorded.

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose telephone number is (703) 308-3989. The examiner's schedule is variable between the hours of about 5:30 AM to about 5:00 PM on Monday through Thursday and alternate Fridays.

For communication by fax to the organization where this application or proceeding is assigned, (703) 305-7719 may be used for official, unofficial or draft papers. When using this number a call to alert the examiner would be appreciated. Numbers for faxing official papers are 703-872-9310 (before finals), 703-872-9311 (after-final), 703-305-7718, 703-305-5408 and 703-305-5433. The above fax numbers will generally allow the papers to be forwarded to the examiner in a timely manner.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Arlen Soderquist

February 26, 2003

ARLEN SODERQUIST
PRIMARY EXAMINER